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FOOD NEWS

FOR CONSUMERS

Volume 8 Number 2 Summer 1991

United States Department of Agriculture
Food Safety and Inspection Service

Answers To Your Food Handling Questions



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Summer 1991
Vol. 8, No. 2

Food News for Consumers is published by USDA's Food Safety and Inspection Service, the agency charged with ensuring the safety, wholesomeness and proper labeling of the nation's meat and poultry supply. The magazine reports how FSIS acts to protect public safety, covering research findings and regulatory efforts important in understanding how the agency works and how consumers can protect themselves against foodborne illness.

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The Challenge of Summer Food Safety

A Message from FSIS's Deputy Administrator for Science and Technology, Dr. Marvin A. Norcross

Summer is the time of year when we like to take things a bit easier. But where food safety is concerned there can be no relaxation of the basic principles which keep us from developing foodborne illness.

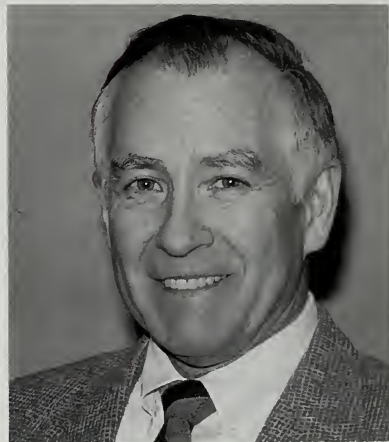
Why? Statistics show the incidence of some types of foodborne illness rises in the summer as a result of warmer temperatures favorable to increased bacterial growth. Also, consumers forget that the basic rules that apply to keeping food safe in the home apply at the picnic grounds as well.

Two generations ago there was less need to educate consumers about safe food handling. People grew up understanding that food animals, like people, carry bacteria. As a result, they knew meat and poultry products should be handled safely and cooked thoroughly.

Today's consumers see clean, carefully wrapped meat and poultry products in plastic trays in grocery stores and believe the products are pathogen free. Perhaps one day in the future, as science progresses, we will have meat and poultry products that do not need the careful attention they do today.

But in the meantime—and especially in the summertime—consumers need to take extra care. Take a look at "Foodborne Illness Peaks in Summer" (p. 10) for the reasons why.

For a complete rundown on the rules for safe barbequing, the Meat and Poultry Hotline has put together the "Barbeque Handbook" (p. 4), valuable reading as we head outdoors.



Dr. Marvin A. Norcross, Deputy Administrator for Science and Technology in USDA's Food Safety and Inspection Service, is a veterinarian with a doctorate in pathology. Prior to joining USDA, Dr. Norcross was Associate Director for New Animal Drug Evaluation at the Food and Drug Administration.

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FROM USDA'S MEAT AND POULTRY HOTLINE.....

A BARBEQUE

Handbook

Summer very nearly means barbeque these days! Meals cooked outdoors increase dramatically during the summer months.

The variety of food people are grilling is also on the upswing, says Betty Hughes, Consumer Affairs director for Weber Grill. A race is on to find fancy recipes and unusual grilling methods for all kinds of food.

With this variety, there is an increased need for awareness of safe food handling practices. Some recipes and grilling methods may not be safe, especially in warm weather when foodborne illness rates increase anyhow.

Use these simple guidelines for a safe outdoor meal, whether it's marinated shishkabobs or your favorite grilled franks.

GET READY...

•**TRANSPORTING.** When transporting food, either from the grocery store or to a picnic site, keep it cold to minimize bacterial growth. Pack meat, poultry, salads and other perishables in an insulated cooler with an ice source.

Keep the cooler in the shade and avoid opening the lid too often. In fact, if you're taking a lot of beverages for a large crowd, pack beverages in one cooler and perishables in another.

•**MARINATING.** Marinate meats in a glass dish in the refrigerator, not on the counter. Reserve a portion for a dip or basting sauce that hasn't had raw meat in it. Don't re-use the marinade used on raw meat unless it's been boiled.

•**PRECOOKING.** When cooking ahead, be certain to cook the food completely in the microwave or oven. This ensures that bacteria in the raw food are destroyed. Reheating later on the grill can provide a barbequed flavor.

Partially cooking meat or poultry in the microwave or oven, or parboiling to reduce grilling time is safe only if the food then goes immediately onto the grill.

GET SET...

•**HEATING THE GRILL.** For safety and quality, the coals should be very hot before cooking food. It can take 30 minutes or longer before the coals are ready. They should show a light coating of ash for optimal heat.

•**CARRYING OUT THE FOOD.** Wash forks, brushes and plates that come in contact with raw products before using them to handle cooked food.

Keep vegetables or fruits intended for grilling separate from the raw meats. Someone may come along and eat some of those luscious-looking raw items. You wouldn't want them to be contaminated with juices from the raw meats or fish.

Be sure to take a fresh plate out to the grill to hold the cooked food. Bacteria that may be in juices of raw products could spread to the cooked

food if it is placed on the plate that held the raw products.

Take outside only the quantity of food that you will cook and eat. Foods should not sit at outside temperature over 2 hours. When it's over 85° F, the time limit is 1 hour or less.

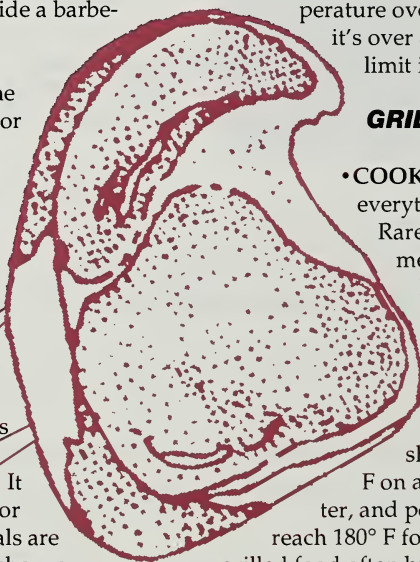
GRILL!...

•**COOK WELL.** Cook everything thoroughly. Rare or medium rare meat or poultry can harbor harmful bacteria. Fish should always be fully cooked.

For optimal safety, meat should reach 160° F on a meat thermometer, and poultry should reach 180° F for doneness. Since grilled food often browns very fast on the outside, make a "sample cut" to visually check for doneness. The juices should run clear and flesh should not be pink. Be careful also not to overcook, and don't consume charred food.

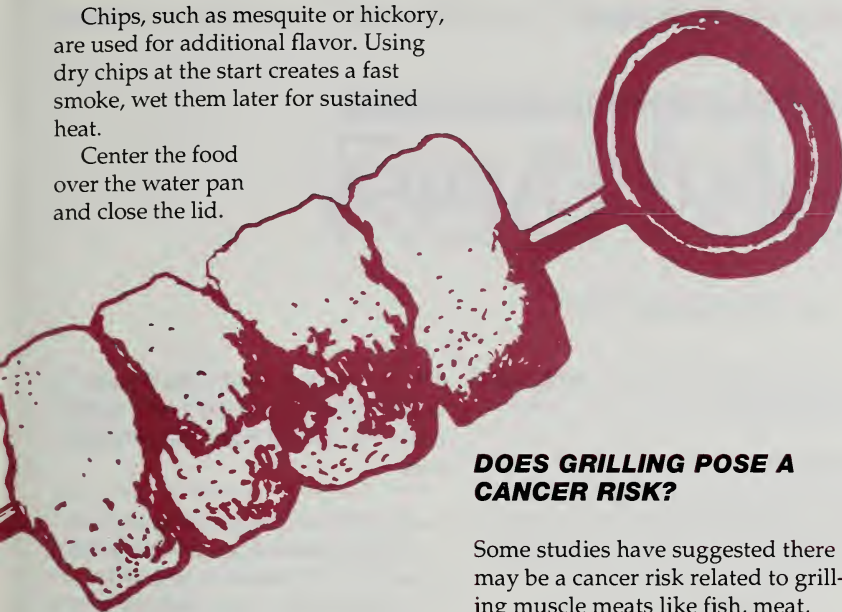
•**SMOKING:** Smoking is a grilling technique used to add flavor to large cuts of meat, using a slower cooking method. Depending on the size of the product you're smoking, the process can take up to 8 hours.

Use high quality charcoal to build a hot fire. Pile about 50 briquets in the center and when they are covered with grey ash, push them into two piles. Center a pan of water between the two piles.



Chips, such as mesquite or hickory, are used for additional flavor. Using dry chips at the start creates a fast smoke, wet them later for sustained heat.

Center the food over the water pan and close the lid.



Keep the grill vents open.

The temperature in the smoker should be maintained between 250° and 300° F for safety. Add about nine coals every 1 to 2 hours during the smoking process.

Smoking times vary considerably with the outside temperatures, so monitor the smoker temperature carefully in colder weather.

Meat is done when it reaches an internal temperature of 160° F; poultry should reach 180° F.

AT THE FINISH.....

• **SERVING THE FOOD.** Serve immediately to keep hot foods hot. During the serving, perishable foods should not be off refrigeration over 2 hours. If the temperature is 85° F or above, try to keep serving time under 1 hour.

• **CLEANING UP.** Clean the grill. Refrigerate any leftovers promptly, dividing larger quantities into small, shallow containers. If you are returning home from an outing, you can save leftovers kept in a cooler that still has an adequate cold source as long as they didn't sit out at high heats over the time limits.

DOES GRILLING POSE A CANCER RISK?

Some studies have suggested there may be a cancer risk related to grilling muscle meats like fish, meat, poultry, game and so forth. As with many things, "moderation" is the watchword. Based on present research findings, eating moderate amounts of grilled foods cooked to a safe, yet medium temperature does not pose a problem for barbeque lovers. But if you are concerned, you can further lower any risk with these tips from the American Institute for Cancer Research:

- If you grill more than several times a week, consider precooking (microwaving or parboiling) the meat so it is not on the grill very long.

- Raise the level of the grill so food is farther from the heat.

- Remove visible fat to avoid flare-ups.

- Cook meat until it's done and avoid consuming charred meat.

- Clean the grill after each use.

—Cynthia C. Gentsch, Certified Home Economist (C.H.E.) on USDA's Meat and Poultry Hotline and Susan Templin Conley, Manager, Meat and Poultry Hotline

USDA's Meat and Poultry Hotline handles calls on the handling of perishable foods. Hours are 10-4 weekdays, Eastern Time.

Dial 1-535-4555.

Washington, D.C. area residents call 447-3333.



TIPS FOR SAFE GRILLING

- Marinate foods only in the refrigerator. Reserve a portion of the marinade, before raw meat is placed in it, for use later in basting or as a dip for cooked food.

- To avoid flare-ups and charred food, remove visible fat from meat.

- Don't partially cook unless food will go immediately onto the grill.

- If cooking ahead, cook completely, then cool down fast for reheating later.

- Cook meat and fish thoroughly to 160° F. For taste, cook poultry to 180° F. Flesh shouldn't be pink and juices should run clear.

- Serve food from the grill on a clean platter, not one that has raw, possibly contaminated juices on it.

What Consumers Want to Know About Chicken & Turkey

by CiCi Williamson, C.H.E.*

1. "Do bacteria from poultry contaminate the counter and everything they contact? Can bacteria pass from object to object or into cuts on my hands?"

Poultry, like all raw foods of animal origin, carries salmonella and other bacteria. It should be handled carefully to prevent cross contamination. Never let raw poultry or its juices contact cooked foods or foods that will be eaten raw like salad ingredients.

Salmonella bacteria must be eaten to cause illness. They cannot enter the body through a cut on your hand. Refrigeration slows the growth of salmonella and thorough cooking destroys it.

2. "After I left the grocery, I did more shopping. The turkey roast was

in my van for 3 hours on a 90-degree day. Is it safe?

Absolutely not. Don't leave poultry in a hot car for more than 30 minutes. The supermarket should be your last stop before heading home, and perishable foods, like turkey, should be the last you choose before checkout. Unload perishables from your car first and refrigerate them immediately.



3. "Sometimes when I buy chicken, it looks frozen. But by the time I get it home, it is defrosted. Is it safe to freeze?"

Yes. What you have observed is only frozen surface tissues. The entire chicken is not frozen. Processors quickly chill and store fresh chicken at 28 to 32° F to prevent the rapid growth of bacteria and increase its shelf-life.

4. "I've had a thawed turkey breast in the refrigerator 8 days. Is it safe to cook? I'm 90 and I don't want to get sick."

Senior citizens, pregnant women, very young children and people who suffer from chronic illnesses are especially vulnerable to foodborne bacteria.

But for persons of any age, 8 days is too long to refrigerate raw or cooked poultry. The safe time limit for refrigerating raw poultry is 1-2 days; 3-4 days if it's cooked.

Your turkey may have begun to spoil. Even without spoilage indicators like an off-odor or sticky surface, harmful bacteria may be present. Discard it.

5. "I'm concerned about the dark color of meat around the bones of chicken. How do you prevent it?"

First, it's perfectly safe to eat chicken meat that turns dark during cooking. The darkening around bones occurs primarily in young broiler-fryers 7 to 9 weeks old. Since their bones have not calcified completely, pigment from the bone marrow can seep through the porous bones. When the chicken is cooked, the pigment turns dark.

Try buying a more mature 5 to 7 pound baking hen or debone chicken before cooking.

*Certified Home Economist

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HANDLING AND STORING POULTRY SAFELY

- Store raw poultry in the refrigerator (40° F) 1 or 2 days only before cooking or freezing. Store whole birds in the freezer (0° F) up to 1 year; parts up to 9 months; giblets 3 to 4 months.
- Before cooking poultry, throw away packaging and rinse product under cool running water. Cut on a nonporous cutting board.
- Wash board, utensils and counter with detergent and hot water immediately.
- Set oven temperature no lower than 325° F. For doneness, cook breasts to an internal temperature of 170° F and dark meat or whole birds to 180° F, or until juices run clear and flesh is tender.
- Refrigerate leftovers within 2 hours after cooking.

What Consumers Want to Know About Red Meat

by Pat Moriarty, R.D.*

1. "Why is prepackaged ground beef often red on the outside, but a greyish brown on the inside?"

This color difference is a natural phenomenon. Red meat contains a pigment called oxymyoglobin. When meat is exposed to air this natural pigment combines with oxygen to produce the red color referred to as "bloom." The inside portion of the meat, while perfectly safe, may be darker due to lack of oxygen.

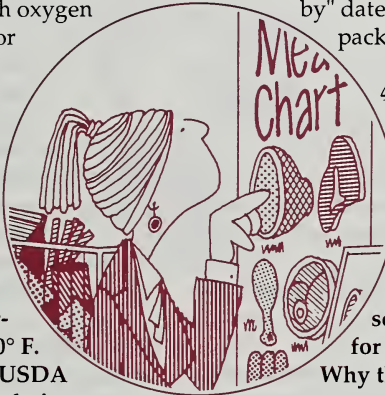
2. "I always thought that pork should be cooked to a final internal temperature of 170° F. A friend told me that USDA changed its recommendation to 160° F several years ago. Is this true?"

Yes. To prevent confusion, USDA now recommends that fresh pork (as well as other meats, poultry, fish and egg products) be cooked to a minimum internal temperature of 160° F.

While cooking meat to a temperature of 160° F normally assures safety, many people prefer the taste of pork cooked to 170° F. That was the reason for the earlier recommendation—taste not safety.

3. "How long is it safe to keep a smoked ham in the refrigerator? Will a vacuum-packaged ham keep longer?"

Both plastic-wrapped and vacuum-packaged hams must be refrigerated. A plastic-wrapped ham will keep about 1 week. The smoking process adds flavor but does not preserve the ham. A vacuum-packaged ham should be consumed by the "Use-by" date or within 1 week after the "Sell-by" date listed on the package.



4. "How long is it safe to keep fresh meat in the refrigerator? I was always told to use it within several days, yet supermarkets seem to keep meat for a week or so. Why the difference?"

Ground beef and poultry should be used within 1-2 days. Red meats can be stored in the home refrigerator for 3-5 days. Commercial refrigerators can safely store meat for longer periods because they are significantly colder than home refrigerators. Meats are held in commercial refrigerators/lockers in the back of the store until rotated out to display cases for consumer purchase.

5. "What is sodium erythorbate? I've seen this word listed on packages of many luncheon meats."

Sodium erythorbate is an accepted curing agent. It is also used to prevent undesirable color changes from occurring in processed meats. The

HANDLING AND STORING RED MEATS

1. Keep raw meat under constant refrigeration. Wrap it securely so that packages do not leak and contaminate other foods or surfaces.

2. Don't thaw food on the kitchen counter. Bacteria multiply rapidly at room temperature.

3. Wash hands and utensils after contact with raw meat. Wash cutting boards or other work surfaces. Bacteria, often present on raw foods, can spread to other foods if you aren't careful.

4. Cook red meat to 160° F. Use a meat thermometer to check that it's cooked all the way through. Red meat is done when it's brown or grey inside.

5. Freeze or refrigerate leftovers promptly. Divide leftovers into shallow containers for rapid, even cooling.

additive is required in some meat products to prevent the formation of nitrosamines linked to cancer development. Sodium erythorbate is made from sugar and is chemically related to Vitamin C.

*Registered Dietitian

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What Consumers Want to Know About Deli Foods

by CiCi Williamson, C.H.E*

1. "I don't know how long I've had some deli cold cuts in my refrigerator. If they smell good, are they safe to eat?"

You can't see, smell or taste the bacteria that cause foodborne illness. If the cold cuts have been opened and refrigerated more than a week, discard them.

CAUTION: If meat is slimy or sticky, has an off-odor or is discolored, food spoilage and, possibly, foodborne bacteria could be present. Do not use it.

Generally you can freeze cold cuts that won't be used soon after purchase.

HANDLING AND STORING DELI FOODS SAFELY

Buy only deli foods that are stored at safe temperatures and handled in a sanitary manner. Don't buy deli foods displayed at room temperature.

Deli-sliced bologna and salami remain safe 3 to 5 days in your refrigerator; sliced turkey, chicken and roast beef, 2 to 4 days. Freeze if not used by then.

Store vacuum-packaged cold cuts and hotdogs 2 weeks unopened, 1 week opened. For foods with a "Sell-by" date, simply use them within five days of purchase. If the product has a "Use-by" date, observe that.

Salads and cooked fresh deli foods are more perishable. Use them within 1 or 2 days. Any foods with stuffing should be used on the day of purchase!

2. "The store clerk was handling some raw meat and didn't wash his hands before picking up my deli meat to slice it. Is it safe?"

Whether you're a clerk or a home cook, you should always wash your hands before and after touching raw meat. Bacteria from raw juices can cross-contaminate cooked foods.

Since cold cuts are usually eaten without further cooking, any bacteria would not be destroyed. Eating a sandwich made at this deli could be risky.

3. "The potato salad I just purchased at the deli tastes spoiled. Where should I complain?"

Potato salad is not a product under USDA jurisdiction. Foods purchased at food service establishments and supermarkets are regulated by your state and local health departments.

Contact these officials listed in your phone book.

Processed deli meats like cold cuts or a sealed carton of chicken salad are inspected by the USDA. If you have a concern about this type of product, call the Hotline at 1-800-535-4555.

4. "The sliced ham and roast beef I bought from the deli shimmers with green iridescent colors. Does this mean it is spoiled?"



Not necessarily. Meat contains fat, iron and many other compounds. When light hits a slice of meat, it splits into colors like a rainbow. There are also various pigments in meat compounds which can give it an iridescent or greenish cast when exposed to heat and processing.

Spoiled meat would probably also be slimy or sticky and have an off-odor.

5. "Is it safe to buy uncooked pre-stuffed meats from the deli?"

The USDA recommends against purchasing previously stuffed whole poultry products because these items are highly dense and perishable. Cold storage may not stop bacteria from growing in the stuffing inside the bird's cavity. But smaller products like stuffed pork chops or chicken breasts are safe to buy.

*Certified Home Economist

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What Consumers Want to Know About Shelf-stable, Canned & Packaged Foods

by Pat Moriarty, R.D.*

1. "How long is it safe to keep canned goods?"

Low-acid canned goods such as canned meat and poultry, stews, corn, carrots and peas can be stored in the cabinet 2-5 years. High-acid foods like tomato-based products, fruits, juices, vinegar-based salad dressings and sauerkraut should be used within 9-18 months. Store canned goods in a cool (below 85° F), clean, dry place.

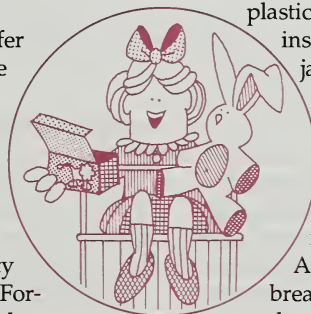
2. "I have several cans of food that accidentally froze. Are they still safe to use?"

Frozen canned goods, whether left in a car, basement or cabin, can present health problems. Seams on cans may be compromised when cans freeze and the contents swell. The cans should be moved immediately to a refrigerator and allowed to thaw. After thawing, cook and use the food or cook and refreeze. If the cans were not thawed in the refrigerator, or if you suspect

that the foods may have frozen and thawed more than once, discard them.

3. "My neighbor stores leftover food right in the can? I thought this was dangerous because lead can leach into food."

It is always best to transfer leftover food to a storage container intended for refrigerator use. Food left in the can may develop an off-taste as the food reacts with metals used in the can. However, this is a quality issue, not a safety issue. Fortunately, lead has nearly been eliminated as a metal used in the U.S. canning industry. According to the National Food Processors Association, the percentage of food packed in lead-soldered containers dropped from 90.3% in 1979 to 3.07% in the first quarter of 1990.



4. "I've started buying the new shelf-stable entrees to take to work and heat in the microwave. How long can I expect to safely keep these products on my kitchen shelf?"

Many new types of packaging use plastic or paper containers instead of metal cans or glass jars. Think of these new plastic and paper type containers as "flexible cans." Like cans, the contents have been heat treated (sterilized) to make them shelf-stable. Assuming there are no breaks or tears in the package, these products should maintain top quality for over a year if stored in a cool, dry place.

5. "Meat and poultry products come in so many different kinds of packages these days. How can I tell if a package requires refrigeration?"

Read the label carefully. If refrigeration is necessary for safety, the label must say "KEEP REFRIGERATED." If the package was purchased off the shelf, chances are the product will not require refrigeration until opened.

*Registered Dietitian

SHELF-STABLE HANDLING TIPS

1. Store shelf-stable products in a cool, dry place.
2. Do not store canned goods in any location such as a garage or cabin where the temperature may drop below 32° F or go above 85° F.
3. Place newly purchased packages behind older ones, so each package can be used within its recommended shelf-life.
4. Check labels carefully to make sure that the product does not require refrigeration. Check to see if a "Sell-by" or "Use-by" date is on the container.
5. Use high-acid canned goods within 18 months. Use low-acid canned goods within 2-5 years. Home canned goods should be used within 1 year.
6. Do not use cans or glass jars with dents, cracks, or bulging lids.

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Foodborne Illness PEAKS in Summer—WHY?

by Mary Ann Parmley

Year after year you see the same advice: You need to be more careful with food handling in summer because the rates of foodborne illness spike in hot weather. "Foodborne illness" is the technical name for "food poisoning."

No one can argue with the facts, but the question is why? In talking with researchers who study foodborne illness, the answer turns out to be two-fold.

First there are natural causes. Bacteria, present throughout the environment in soil, air, water and in the bodies of people and animals, grow faster in the summer heat. Most foodborne bacteria grow fastest at temperatures from 90 to 110° F. Bacteria need moisture to flourish too, and summer weather is often humid.

In the right circumstances, then, foodborne bacteria can multiply quickly on food to numbers large enough to make someone eating the food get sick.

Second, there are "people" causes for the upswing in summertime foodborne illness. "In summer more people are cooking outside," says micro-

biologist Carl Custer with USDA's Food Safety and Inspection Service. "You have picnics and cookouts without the refrigeration, washing facilities and cooking control of a kitchen."

Fortunately, people don't get sick from contaminated food very often. Most people have a healthy immune system that protects them not only from bacteria on food but from other harmful organisms in the environment. Government agencies and food producers go to great lengths to keep food safe. And, of course, consumers can protect themselves at home with proper refrigeration and thorough cooking of perishable foods.

Still, foodborne illness is a bigger problem in summer, and we'll look here at what researchers can tell us about four bacterial pathogens government and food industry experts currently have under "close surveillance."

The big four are *campylobacter*, *salmonella*, *hemorrhagic E. coli* and *listeria*. According to Centers for Disease Control (CDC) statistics, these and other bacterial pathogens cause some 92% of individual cases of foodborne illness and about 66% of outbreaks

where a number of people get sick after eating the same contaminated food.

Campylobacter. Speaking to the American College of Veterinary Microbiologists and the American Association of Veterinary Immunologists (Chicago: Nov. 4, 1990), Dr. George Beran said *Campylobacter jejuni* is responsible for most of the cases of serious diarrheal illness reported annually in the United States. Dr. Beran, a veterinary microbiologist, is at the College of Veterinary Medicine, Ames, Iowa.

While experts estimate *campylobacter* may cause more foodborne illness than *salmonella*, it is somewhat less threatening than *salmonella* as it is more easily controlled through refrigeration and cooking.

Individual cases of *Campylobacter jejuni* peak in summer, with more outbreaks in spring and fall.

Drinking raw (unpasteurized) milk and untreated water account for many *campylobacter* cases in this country. Another leading cause is consumption of undercooked meat and poultry. For taste and safety, red meat should be cooked to an internal

temperature of 160° F; poultry to 180° F. (See the "Fighting Back" chart for more details on food handling precautions.)

Salmonella. CDC figures for 1989 (*Summary of Notifiable Diseases*) show salmonella-induced foodborne illness peaking in August-September. Dr. Samuel Palumbo, a microbiologist with USDA's Agricultural Research Service (ARS) in Philadelphia, suggests that since inadequate refrigeration is a primary cause of salmonellosis, warm weather simply raises the risk of infection.

Salmonellosis is largely a diarrheal illness, but may also cause vomiting and fever.

How to protect yourself? Dr. Palumbo suggests checking to make sure your refrigerator is running at a safe 40° F, and taking care to cook

food thoroughly and not spread raw meat or poultry juices to cooked products or to food that will be eaten raw. Eggs should also be properly refrigerated and thoroughly cooked.

Enterohemorrhagic *E. coli* (O157:H7). *E. coli*, according to expert Dr. Michael Doyle at the University of Georgia, shows a definite summer rise.

Hemorrhagic *E. coli* is a serious threat for several reasons. It will grow at temperatures as low as 47° F—unfortunately many home refrigerators may be running at temperatures that high. The symptoms are severe—bloody, debilitating diarrhea. And, finally, side-effects can be grave.

Fortunately, the precautions you can take are fairly simple. Dr. Doyle also recommends checking to make sure your refrigerator's running at 40°

F, cooking ground beef thoroughly, particularly on the grill, and making sure any burgers you eat out are well done. Under-cooked hamburger has figured in a number of hemorrhagic *E. coli* outbreaks.

Listeria. "With only 1,700 cases of listeriosis a year currently documented," says USDA/ARS's Dr. Sam Palumbo, also a listeria researcher, "it's hard to tell yet if there's any seasonal variation. But, since listeria is a hardy pathogen, it's wise to be aware of its presence year-round."

Difficult to control? Yes. Listeria bacteria grow well at 41° F, normally a safe refrigerator temperature. While listeriosis generally just produces flu-like symptoms in healthy adults, it can cause miscarriage in pregnant women and be dangerous to the elderly.

Palumbo advises following conservative refrigerator storage times to guard against listerial problems, and, for extra protection, to use hotdogs and pre-cooked lunch meats within 1 to 2 days of purchase or to freeze them for later use.

For more information on keeping your summer food safe, see the "Fighting Back" chart or, with specific questions, call USDA's Meat and Poultry Hotline, 1-800-535-4555. Washington, D.C. residents call 447-3333. Hours are 10 to 4 weekdays.

Fighting Back--Protecting Yourself from Foodborne Illness

Most reported foodborne illness in this country is bacterial, but viruses (5% of cases) and parasites (4% of cases) also cause problems. Summer mold problems are largely limited to food spoilage. This chart gives guidelines for protecting yourself against all the foodborne disease carriers.

1. General—Don't drink raw (unpasteurized) milk, untreated water or eat raw shellfish.

2. Shopping—Buy food in undamaged containers. Refrigerate perishables quickly.

3. Kitchen—To avoid cross-contamination, where bacteria or other pathogens pass from one food to another, keep everything clean. Wash cutting boards, hands and utensils after contact with raw flesh foods and their juices and before beginning preparation of other foods.

4. Cooking—Red meat should be cooked to an internal temperature of 160° F; poultry to 180° F. Juices should run clear and fish should flake with a fork. White and yolk of the egg should be cooked firm.

5. Refrigeration—Never leave perishables unrefrigerated more than 2 hours. Store leftovers in small containers for quick cooling. CHECK your refrigerator to make certain it's running at a safe 40° F. Your freezer should register 0° F.

6. Mold—See some mold? You can cut a small spot from hard cheese, salami and firm fruits and vegetables. Keep your knife out of the mold and cut out an inch-wide square around and below it. DISCARD other moldy foods.

References

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• Centers for Disease Control - Morbidity and Mortality Weekly Report, *Summary of Notifiable Diseases* 1989, Oct. 5, 1990, Vol. 38, No. 54. USHHS-PHS, Atlanta, Ga.

• Beran, George, Veterinary Microbiologist, College of Veterinary Medicine, Ames, Iowa - Keynote address for the Symposium on Current Trends in Food Safety, Nov. 4, 1990, Chicago.

PACK-UP-AND-GO WITH **SUMMER FOODS**

IN THE KITCHEN.....

- Clean preparation is essential
- Wash hands, work area and utensils before preparing food
- Marinate in the refrigerator
- Don't thaw on the counter

MENU PLANNING....

- Plan to take only the amounts of foods you'll use
- With proper cooler and ice, most foods are safe for short periods
- Salads with store-bought mayonnaise are safe, if kept cold. Avoid creamy or custard-like foods
- If a cooler is not an option, take fruits, vegetables, hard cheese, canned or dried meats or fish, dry cereal, bread, peanut butter, crackers

PACKING IT UP.....

- Start with cold food—pack right from the refrigerator
- Always use an insulated cooler
- Include a cold source in the cooler. Use ice, ice packs, frozen water or juice, frozen foods such as hamburgers and ribs, or cold fruit
- Take along disposable washcloths
- Plan to keep hot foods hot with a thermos or insulated dish

ON THE ROAD.....

- Wrap raw foods securely, avoid raw juices coming into contact with ready-to-eat foods
- Don't put the cooler in the trunk
- Keep the cooler in the shade at the picnic
- Keep the lid on, avoid repeated openings
- Replenish the ice if it begins to melt

HEAT AND EAT.....

- Keep food cold until cooking on the grill
- Cook completely at the picnic site, no partial cooking ahead
- Cook thoroughly—meat and poultry should not be pink, juices should run clear, and fish should flake with a fork
- Use a clean plate for serving cooked food
- Be careful that raw meat juices don't touch other food

COME AND GET IT.....

- In hot weather (85°F. and above), food should never sit out for over an hour
- Serve smaller portions, so food does not stay out of the cooler too long
- Serve food quickly from the cooler, and replace it inside the cooler fast

REPACKING.....

- Leftovers? If there is still ice in the cooler when you get home, and the food didn't sit out at the picnic, the food is okay to save

OTHER QUESTIONS ON SUMMER FOOD SAFETY?

If you have questions about summer food safety, call the USDA Meat and Poultry Hotline at 1-800-535-4555. Hours: Monday-Friday, 10 a.m.-4 p.m., Eastern Time. Washington, D.C. residents call 202-447-3333.

NEWSWIRES

Miniature Pigs' Immune Systems May Hold Answer to Trichina-free Pork

Dr. Joan K. Lunney, an animal scientist at the Beltsville, Md. Agricultural Research Center, spends a lot of time in the pig barns with her research subjects.

Many mornings, you will find Dr. Lunney taking blood samples from three strains of specially bred miniature pigs. She is looking for swine genes that control immunity to trichina parasites. Trichinae are microscopic-sized worms that infect pigs. Pigs are usually infected from eating improperly cooked garbage or uncooked meat scraps.

The parasite can be passed along in the meat to humans if they fail to cook pork to an internal temperature of at least 137° F.

Freezing pork for 2 to 3 weeks can also kill the parasite. About 20 cases of trichinosis in humans are reported each year in the U.S., although more cases may go unreported when patients suffer only mild flu-like symptoms.

"The results of the research suggest that it may be possible to breed pigs that will be able to 'flush' the trichina parasites from their systems before going to market," said Dr. Lunney.

"Three strains of pigs were inoculated with trichinae," she said. "After the trichina cysts were established in the muscles, the pigs were inoculated a second time. One strain of pigs reacted by destroying almost all the cysts that host the trichina parasite, while the other two groups did not react."

Scientists are not sure why only one strain of the pigs repelled the trichinae, but they believe the second round of infection may have triggered the pigs' immune systems to eliminate the parasites. The question is: How does the reactive strain of pigs differ from the other two?

This research may also lead to a method to control other parasitic diseases, such as toxoplasmosis, a disease carried by cats that causes birth defects in humans and death in immune-deficient patients.

For additional information, contact Dr. Joan K. Lunney, USDA-ARS Helminthic Diseases Laboratory, 1-301-344-1768.

—Liz Lapping

USDA Issues New Handbook 8 Section on Fat-Trimmed Beef Products

In case you didn't know, USDA's Handbook No. 8 is the official and definitive source for information on the composition of foods in the American diet.

A new section, titled "Composition of Foods: Beef Products...Raw, Processed, Prepared," is now available with precise nutrient information on more than 300 different fat-trimmed retail cuts.

While the 1986 edition of the Handbook provided data for retail beef cuts trimmed to 1/2-inch of outside fat, this new 1990 edition also provides data for beef with 1/4-inch of outside fat and with all outside fat removed. More than 40 percent of retail beef cuts in the market today have all outside fat removed.

A recent nationwide market basket survey shows meat retailers now trim more of the fat from cuts of beef they sell, primarily in response to consumer concerns about the fat content of their diets. These trimming practices significantly reduce the amount of fat in retail cuts of beef.

It is extremely important for dietitians, researchers and educators to have nutrient information that reflects the buying and eating habits of the American public. Both individual dietetic counseling and nutritional research depend on USDA food composition data.

To order a copy of the new section, send check or money order for \$21.00, payable to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Refer to stock number 001-000-04555-5.

For additional information, contact: Barbara Anderson, nutritionist, or Ruth Matthews, chief of the Nutrient Data Research Branch, Human Nutrition Information Service, 1-301-436-8491.

—Liz Lapping



Dr. Joan Lunney with "miniature" pig from her study group and standard-sized pig of the same age.

FSIS Moves to Adopt HACCP—The New “Gold Standard” in Modern Food Inspection

More than 40 food industry representatives met in Baltimore recently with staff from USDA's Food Safety and Inspection Service (FSIS) to devise the first HACCP plan designed for use in meat and poultry inspection.

HACCP, an acronym which stands for a Hazard Analysis and Critical Control Points system, was hailed this year by a food industry group—the American Meat Institute—as the new “gold standard for modern food inspection.”

“Not only is HACCP today's state-of-the-art approach to food inspection,” said FSIS administrator Dr. Lester Crawford, “but it already has a strong, proven track record”. Crawford continued, “Since HACCP was initially developed in the 1960s to keep astronaut meals safe in space, it has gained acceptance in many parts of the food industry. Today HACCP safety and quality systems are used by food companies worldwide. The Department of Commerce plans to introduce a HACCP approach to voluntary fish inspection, and a number of state health departments are using HACCP systems in food service inspection.”

What is distinctive about HACCP inspection? “HACCP focuses on *prevention*,” said Crawford. “In a care-

fully conceived HACCP plan, you break down the production of a food product into a series of identifiable steps. Those steps where the product could be considered unsafe if something went wrong are tabbed as critical control points or CCPs. If the processor then makes certain each of those CCPs is handled properly throughout production, HACCP is working and the food should be safe”

The Baltimore Conference.

FSIS has been laying the groundwork for the Baltimore conference for the past year, planning made more difficult by the fact that there was little experience to build on.

Working for three days and long into the nights, the industry technical experts, in consultation with FSIS meat and poultry specialists, devised a model HACCP plan for ready-to-eat refrigerated foods—the first of five model plans for different meat and poultry processes.

Next FSIS will test the HACCP model plans in volunteer plants. FSIS will evaluate their effectiveness in inspection. The evaluation will determine whether the Agency goes forward with mandatory implementation of HACCP for all meat and poultry inspection.

“As new food products are developed and foodborne illness continues to pose health threats, a rigorous system that prevents problems up front is needed to better monitor meat and poultry production,” Crawford concluded.

—Marjorie Davidson

USDA Researcher Develops New *Yersinia* Tests

In the continuing efforts of the USDA to guarantee the safety of meat and poultry, Dr. Saumya Bhaduri, a molecular microbiologist

at the Agricultural Research Service's Eastern Regional Research Center in Philadelphia, has developed two tests

for *Yersinia enterocolitica*, a pathogen of growing concern.

The first, a crystal violet dye test, is important because it is a simple, quick way to separate harmful strains of *Yersinia* from the harmless ones. Only some strains of *Y. enterocolitica*, those containing a specific piece of genetic material, are the disease-producers. This particular test takes only 5 minutes!

The second test uses Congo red dye. This test not only detects the harmful strains, but also allows for their recovery for further testing. Other tests now available, including the crystal violet dye test, either kill or alter the bacteria after detection.

The Congo red dye test is especially useful for on-site laboratories in food processing plants, hospitals and sewage treatment facilities where it is essential to isolate the organism live for more detailed study. The entire process can be completed within 12 hours after initial isolation of the bacteria.

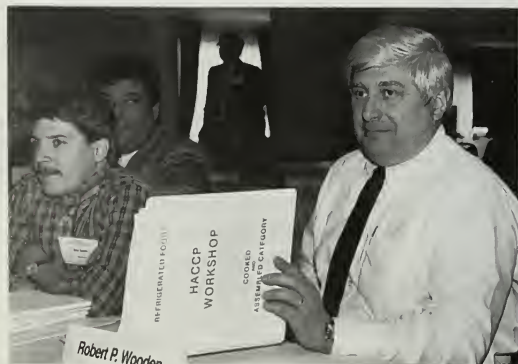
“Food poisoning caused by *Yersinia* is of increasing concern because the organism can grow at normal refrigeration temperatures,” Bhaduri said. “*Yersinia* can reach infectious levels in 4 days in milk or beef and other meat products, and grows at temperatures as low as 32° F, the freezing point of water.”

The disease-producing strains cause classic food-poisoning symptoms such as abdominal pain (can mimic appendicitis), fever, diarrhea and vomiting. Young children are most at risk for contracting yersiniosis.

Thorough cooking and reheating are essential control measures, along with good sanitation and personal hygiene.

For more information, contact Dr. Saumya Bhaduri, Microbial Food Safety Research Unit, Eastern Regional Research Center, ARS, USDA, Philadelphia, Penn., 1-215-233-6521.

—Barbara O'Brien, R.D.



Pillsbury's Robert Wooden, Manager of Product Safety and Regulatory Affairs, at the Baltimore HACCP conference.

ENFORCEMENT ACTIONS

The Food Safety and Inspection Service (FSIS) Compliance Program investigates violations of federal meat and poultry inspection laws. Those products found in violation can be seized, detained or voluntarily recalled. These include products with false or misleading labeling information or those found to contain ingredients not listed on the label. Companies that violate the law are subject to criminal, administrative or civil actions. Here are some recent actions:

PRODUCT: Cooked sausage products.

COMPANY: Far West Meats, Highland, Calif.

ACTION: The firm and its owner were fined \$2,500 each, and ordered to pay an additional \$50 each special assessment. Owner also placed on two years probation.

VIOLATION: Selling product labeled as beef, but which contained hearts and pork.

PRODUCT: Hamburger meat.

COMPANIES: Bobby Bell, cattle buyer for Craig's Processing, Delano, Tex., Jack Clark, co-owner of Hixson Packing Co., Hixson, Tenn., and Norman Craig, owner of Craig's Processing and co-owner of Hixson Packing Co.

ACTION: Three years probation for each count.

VIOLATION: All three defendants pled guilty to one felony count of conspiracy with intent to defraud and distributing an adulterated meat product. Clark and Craig also pled guilty to one felony count of selling adulterated meat.

PRODUCT: Ground beef, Italian sausage.

COMPANY: Lamia's Meat Market, Inc., St. Louis, Mo.

ACTION: Company fined \$12,000. Joseph Lamia, co-owner, fined \$5,000, placed on two months' home detention. Nickolas Lamia, plant manager, fined \$3,000, and placed on three years probation on each count to run concurrently.

VIOLATION: Selling meat adulterated with sodium sulfite to mask natural deterioration of the product.

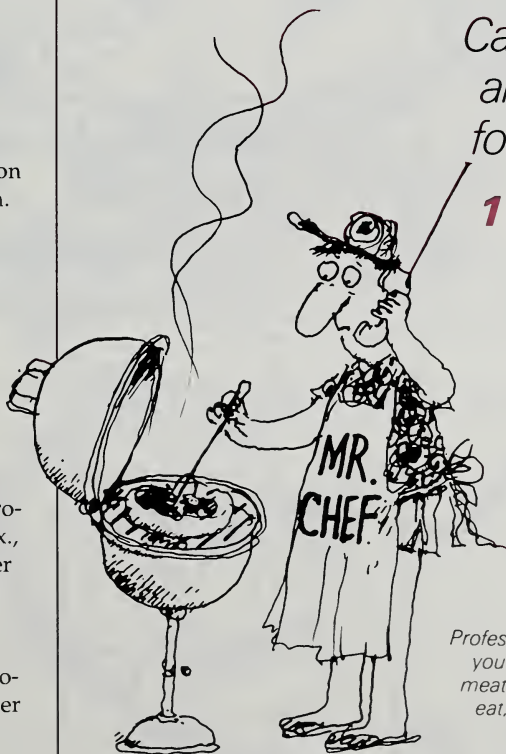
—Herb Gantz

Grill Our Experts With Your Food Safety Questions

Call the USDA Meat and Poultry Hotline for food safety facts

1-800-535-4555

*10:00 am–4:00 pm
Eastern Time*



Professional home economists will answer your questions about proper handling of meat and poultry, how to tell if it is safe to eat, and how to better understand meat and poultry labels.

A public service of this publication and the U.S. Department of Agriculture



In the Holiday Issue

Keep Your Turkey Out of Jeopardy

Food News readers can escape any “fowl” catastrophes by staying tuned for our upcoming Holiday issue chock-full of great, practical food safety advice PLUS the four most common turkey handling mistakes.

Why the concern with turkey “jeopardy”? “Over the last Holiday season, hundreds of callers to USDA’s Meat and Poultry Hotline would have made serious food handling mistakes without our help, and, in some cases, may not even have been able to serve their turkey,” says Hotline manager Susan Templin Conley.

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